

In re Patent Application of:
PROCTOR, JR.
Serial No. 09/997,733
Filing Date: November 29, 2001

In the Claims:

1. (Currently Amended) A method for maintaining synchronization and power control of wireless signals sent between wireless gateways comprising:

transmitting, from a subscriber access unit to a base station processor, a wireless message an idle mode signal having a power level for maintaining an idle mode connection therebetween, the idle mode signal providing synchronization with the base station processor without actively sending data thereto;

receiving the wireless message idle mode signal at the base station processor, the idle mode signal having a power level associated therewith;

determining, by a power level detector in the base station processor, the power level of the wireless message idle mode signal;

transmitting, to a the subscriber access unit, a power control message indicative of a change to the power level of successive idle mode signals messages;

computing, at the subscriber access unit, a new power level corresponding to the power control message;

adjusting, at the subscriber access unit, the transmission power according to the new power level; and

transmitting a successive wireless message idle mode signal from the subscriber access unit to the base station processor at the new power level, the subscriber access unit and the base station processor maintaining an the idling mode connection between the sending of the wireless message and the sending of the successive wireless message by at the power

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level of the power control message.

2. (Currently Amended) The method of claim 1 wherein the idle mode signals messages are sent at predetermined intervals.

3. (Original) The method of claim 2 wherein the predetermined intervals are time slots.

4. (Currently Amended) The method of claim 3 wherein a plurality of a predetermined number of time slots ~~comprise~~ comprises a power control group.

5. (Currently Amended) The method of claim 3 wherein each ~~of~~ the time slot ~~sets~~ corresponds to a particular subscriber access unit.

6. (Currently Amended) The method of claim 5 wherein the power control message is sent to the ~~user-based-on-the~~ subscriber access unit corresponding to the time slot of the ~~wireless~~ idle mode signal.

7. (Currently Amended) The method of claim 6 wherein a power control metric determines a the power level of the power control message.

8. (Original) The method of claim 7 wherein the power control metric further comprises at least one of a signal-to-noise ratio, a link quality measurement, a carrier-

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to-interference (C/I) ratio, and a bit-error rate (BER).

9. (Currently Amended) The method of claim 1 wherein the power control message further comprises a power control bit indicative of a change in the power level for successive idle mode signals messages.

10. (Currently Amended) The method of claim 1 wherein computing the new power level further comprises determining which of a plurality of directional antenna elements the message idle mode signal was sent from.

11. (Original) The method of claim 10 wherein the power control message further comprises a pattern control bit indicative of which of a plurality of antenna patterns is to be used for successive transmissions.

12. (Currently Amended) The method of claim 1 wherein the wireless messages idle mode signals are sent on a reverse link and the power control messages are sent on a forward link.

Claim 13 (Cancelled).

14. (Currently Amended) The method of claim 1 wherein the power control message is sent two time slots after the corresponding wireless message idle mode signal.

15. (Original) The method of claim 1 wherein the power control message is operable for maintaining a code phase

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lock.

16. (Currently Amended) The method of claim 2 wherein the predetermined interval intervals further comprises comprise a minimal duration required to maintain power control.

17. (Original) The method of claim 16 wherein the minimal duration corresponds to an acceptable power control error.

18. (Currently Amended) A system for maintaining synchronization and power control of wireless signals sent between wireless gateways comprising:

a base station processor;
~~at least one subscriber access unit operable to send a wireless message having a power level to the~~ an idle mode signal for maintaining an idle mode connection with said base station processor, the idle mode signal providing synchronization with the base station processor without actively sending data thereto;

a transceiver at the base station processor operable to receive the wireless message idle mode signal;

a power level detector in the base station processor operable to determine the a power level of the wireless message idle mode signal;

a link quality controller in the base station processor operable to compute, based on the power level, a power control message indicative of a change to the power level of successive messages idle mode signals; and

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a transceiver in the base station processor operable to transmit the power control message to a the at least one subscriber access unit, unit; and

the at least one subscriber access unit operable to compute a new power level corresponding to the power control message, and further operable to transmit a successive ~~wireless message~~ idle mode signal ~~from the subscriber access unit~~ to the base station processor ~~at the new power level, the subscriber access unit and the base station processor for~~ maintaining an the idling mode connection at the power level of the power control message ~~between the sending of the wireless message and the sending of the successive wireless message.~~

19. (Currently Amended) The system of claim 18 wherein the at least one subscriber access unit is further operable to send the ~~wireless messages~~ idle mode signals at predetermined intervals.

20. (Original) The system of claim 19 wherein the predetermined intervals are time slots.

21. (Currently Amended) The system of claim 20 wherein a plurality of a predetermined number of time slots ~~comprise~~ comprises a power control group.

22. (Currently Amended) The system of claim 21 wherein the predetermined number of time slots is 16.

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23. (Currently Amended) The system of claim 19 wherein each ~~of the time slot~~ ~~slots~~ corresponds to a particular subscriber access unit.

24. (Currently Amended) The system of claim 23 wherein the base station processor is further operable to send the power control message to the at least one subscriber access unit corresponding to the time slot of the ~~wireless signal~~ idle mode signal.

25. (Currently Amended) The system of claim 18 wherein the power control message further comprises a power control bit indicative of a change in the power level for successive messages idle mode signals.

26. (Currently Amended) The system of claim 18 further comprising a directional antenna having a plurality of elements, wherein the base station processor is further operable to determine the new power level by determining which of the elements the message idle mode signal was sent from.

27. (Original) The system of claim 26 wherein the power control message further comprises a pattern control bit indicative of which of the plurality of elements is to be used for successive transmissions.

28. (Currently Amended) The system of claim 18 further comprising a reverse link and a forward link, wherein the ~~wireless messages~~ idle mode signals are sent on a reverse link and the power control messages are sent on a forward

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link.

29. (Currently Amended) The system of claim 18 wherein the base station processor is operable to send the power control message two time slots after the corresponding ~~wireless message~~ idle mode signal.